

# MemoryViewer

## Integrated MemoryViewer for DRAM & Intel® Optane™ PMem

With its intuitive graphical interface, Linux-based MemVerge MemoryViewer lets you see how all your memory (DRAM and PMem) performs in real-time. Use the dashboard to get an overall view of memory behavior. Or monitor memory usage by individual processes to help identify performance bottlenecks.

### System View in a Single Screen

Combine a graphical (or list) view of system resources with a real-time display of allocated and available memory by type (DRAM or PMem).

### Physical Layout: DIMMs and CPUs

- Locate where DRAM and PMem DIMMs are installed for each server socket.
- Display CPU model and technical specifications.

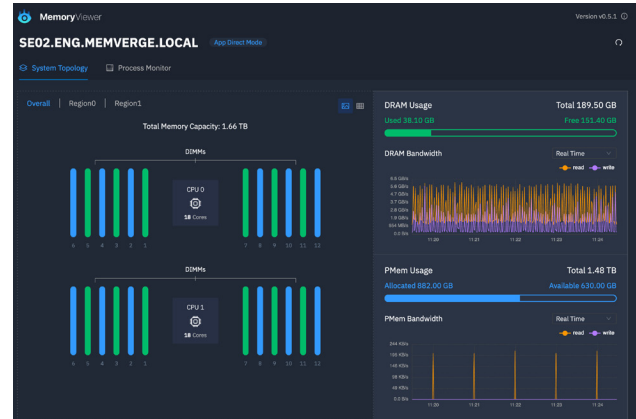
### PMem Configuration

- Identify PMem modes: Memory Mode, App Direct, or Mixed.
- Show PMem configuration: goals, regions, and namespaces.

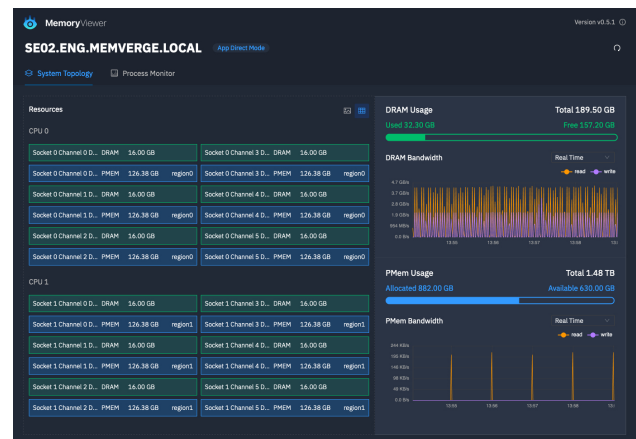
### Easy to Install, Easy to Use

MemVerge MemoryViewer is available in RPM or DEB packages, so installation on your Linux system is straightforward. Use the GUI to click on a DIMM to drill down on capacity, configuration, and performance details. Zoom out to show aggregate performance at the CPU or system level.

Include the MemoryViewer CLI in a shell script to automate data collection from a network of servers.



**System resources: CPU cores, allocated memory, and available memory.**



**Ensure DIMM slots are populated as per vendor recommendations.**

## Memory Page “Temperature”

Applications make system calls to allocate memory pages. Pages that are accessed frequently are “hot.” Applications that allocate lots of memory, but actively use only a small percentage of “hot” memory, are candidates for PMem. Examine patterns of memory allocation and access to decide whether economical PMem can replace expensive DRAM without diminishing average memory performance.

## Process Monitoring

- Select one (or multiple) processes to monitor.
- For each process, show real-time (or historical) display of total memory allocated and “hot” memory in use.
- One click starts monitoring of the top ten processes ranked by memory usage.
- Download usage reports in CSV format.

## Integration with Prometheus and Grafana

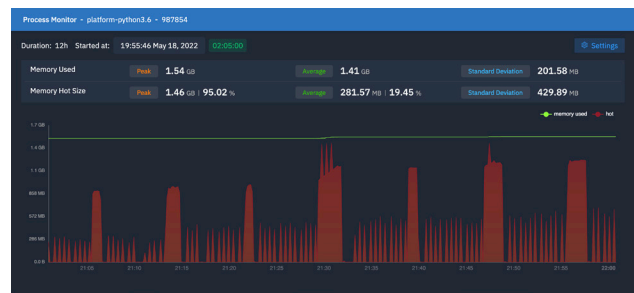
Prometheus can scrape time series logs from multiple MemoryViewer servers at the same time. Use Prometheus as a data source in Grafana to create dashboards and heatmaps.

## Example Use Case

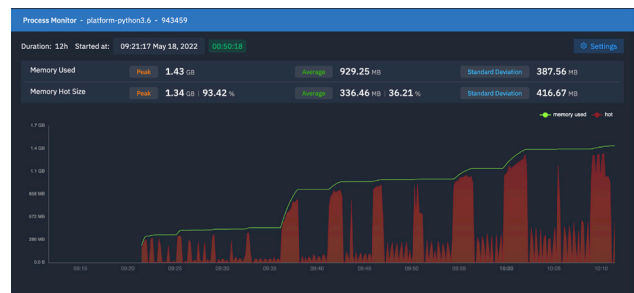
Many AI/ML and genomics applications load large datasets into memory before analysis begins. Intermediate results are written to disk and reloaded (model training and parameter tuning are examples). Examine the memory performance timeline. If the average percentage of hot memory is low (less than 20%, for example), this is a candidate for PMem.

## Download Free Copy of MemoryViewer

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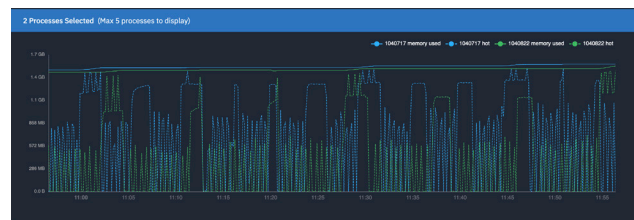
**Low hot memory average: good candidate for PMem.**



**Moderate hot memory average: more investigation required.**



**High hot memory average: application requires all DRAM.**



**Compare memory usage across multiple processes.**